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Implementation of the Master Program «Corporate E-Learning» in the Online Interaction of Russian Universities

Implementación del Programa Master «Corporate E-Learning» en la Interacción en línea de universidades rusas

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ABSTRACT:
In this master program, the authors considered the dynamics of the development of e-learning technologies in the context of online interaction in the electronic educational environment which included the use of cloud infrastructure; the research highlights the large scale and social nature of global networks, the rapid penetration of online technologies into all activities of school teachers, the availability and popularity of online communication and interaction, its specific features, advantages and risks, responsibilities of master students in the global network.
Keywords: corporate e-learning, online interaction, master program, electronic resources.

RESUMEN:
En este programa maestro, los autores consideraron la dinámica del desarrollo de las tecnologías de e-learning en el contexto de la interacción en línea en el entorno educativo electrónico, que incluía el uso de la infraestructura de la nube; La investigación resalta la gran escala y naturaleza social de las redes globales, la rápida penetración de las tecnologías en línea en todas las actividades de los maestros de escuela, la disponibilidad y popularidad de la comunicación e interacción en línea, sus características específicas, ventajas y riesgos, responsabilidades de los estudiantes de maestría en el red global.
Palabras clave: e-learning corporativo, interacción en línea, programa maestro, recursos electrónicos.

1. Introduction

The system of education in Russia has been rapidly improving and developing recently. The

implementation of e-learning is one of the areas crucial for the development of virtually all spheres of human life in the 21st century, including education. Currently, research papers more and more often see corporate e-learning as the most effective type of training which enables, especially in the conditions of the economic crisis, to enhance the training process (Barakhsanova, Vlasova, 2016).

The authors of the published collective monograph (Barakhsanova, Mordovskaya, Fedorov, 2011) claim there are three models of education in modern Russia that reflect the values and the role of education and that are characteristic of the traditional (rural regions), industrial (industrial cities) and post-industrial (large cities) communities. Thus, it is necessary to create conditions at least corresponding with the requirements of developed industrial civilizations, as a maximum – with the requirements of the information society concerning the implementation of e-training of prospective school teachers in the North-East of Russia.

Regulatory documents on the implementation of e-learning in schools and Russian universities state that education, teaching and research activities of students should be carried out in accordance with the Federal State Education Standard; they also confirm the special role of IT technologies in education in general, and especially the use of e-learning and distance educational technologies (Marchyuk, 2013).

International researchers have accumulated vast experience regarding the use and development of e-learning in various educational activities. For instance, A. Aggarwal and P. Makkonen (2009) consider global issues of e-learning. The research focuses on the critical factors for the success of global e-learning.

T.Garrot, M. Psillaki, and S. Rochhia, (2008) aim to determine how higher education institutions can monitor and manage the development of their e-learning activities. Using a balanced scorecard (BSC) developed by e-learning experts and researchers in the field of economics and management, they describe the implementation of e-learning in European educational institutions which took place over three years (2004-2006).

In their paper, N. Wagner, K. Hassanein, and M. Head (2008) rely on the personal experience of implementing e-learning in higher education and identify the main factors that determine its success.

At present, new opportunities are emerging in higher education, and they enable learning through online interaction of universities. In their study, R. Schulz, G.M. Isabwe and F. Reichert (2014) investigate the needs of teachers, especially their pedagogical motivation. This paper, devoted to the issue of teachers' needs, examines the initial and current motivation, as well as the behavior and attitude towards existing e-learning systems or those being developed. The main goal of the project is to clarify the issues concerning existing online communication systems and to analyze the requirements for advanced e-learning systems. This paper presents preliminary results leading to conclusion that facilitating the interaction between students and teachers and the individual teaching style are two main problem areas. At the same time, the essence and specifics of the corporate e-learning of school teachers has not been sufficiently studied in the regional education system of the Republic of Sakha (Yakutia).

The research aims to accomplish the tasks related to modernization of Russia's regional education and implementation of corporate e-learning which would promote the partnerships of Russian universities in teacher training.

These tasks determined the goal of the research: to provide a theoretical substantiation of the organizational and pedagogical conditions for the implementation of corporate e-learning through online interaction of two Russian universities – the NEFU (Yakutsk) and Herzen University (St. Petersburg).

For theoretical understanding of the implementation of corporate e-learning in Russian universities it is necessary to solve the following tasks: to identify the specifics of corporate e-learning, to determine the nature of the information dependence when implementing Corporate E-Learning master program which implies online interaction of Russian universities.

2. Literature review

The development of e-learning and transition to a two-tier education system set new requirements for education management in Russia. This directly relates to the concept of e-learning and the introduction of distance learning technologies. Several years ago the law determining the specifics of the implementation of educational programs using e-learning and distance learning technologies came into force (Electronic (distance) learning…). E-learning is a relatively new term in Russian legislation. It was introduced by the Federal Law of the Russian Federation of February 28, 2012, No. 11-FZ "On Amendments to the Law of the Russian Federation "On Education" with regard to the application of e-learning and distance educational technologies" (expired on September 1, 2013 after the adoption of a new version of the Federal Law No. 273 "On Education in the Russian Federation" (Article 16…), which for the first time (at the legislative level) defined the basic concepts and requirements for the application of these terms, which means significant progress in this sphere.

The law defines e-learning as: "organization of the educational process using information contained in databases and information used when implementing educational programs and information technologies for its processing, technical means, as well as information and telecommunication networks that enable the transmission of the said information via communication lines and interaction of the parties of the educational process" (Electronic (distance) learning…).

For instance, E.Z. Vlasova states that "one of the key conditions in the training of prospective teachers with qualifications appropriate for working in modern school, in modern information educational environment is the use of active training technologies, which includes e-learning. Modern schoolchildren, who were born in the world saturated with IT and communication media, a wide range of information technologies, are ready for it. Modern information technologies should become the technological base for the development of e-learning pursuing a range of didactic purposes" (Vlasova, 2013).

In their studies, E.A. Barakhsanova and E.Z. Vlasova point to the insufficient development of e-learning in the North-East of Russia, including Yakutia, and they say that "in the Russian Federation, e-learning is only beginning to develop, but the educational community is aware of its prospects and takes measures to reduce the backlog in this area" (Gubanova, Kolga, 2015).

In connection with this, on December 14, 2012, the Ministry of Education and Science of the Russian Federation held a meeting on the creation of an interdepartmental working group on the development of e-learning and distance learning technologies that should be included in curricula of educational institutions (Barakhsanova, Golikov, Nikolayeva, 2016). Based on the results of this meeting, on December 26, 2012, the Ministry of Education and Science of the Russian Federation issued Order No. 1097 "On the interdepartmental working group on the development of e-learning, distance learning technologies in the implementation of educational programs in educational institutions" (Sorochinsky, 2017).

If we consider the global trends in the development of e-learning, we may see the increasing financial dynamics on the e-learning market in general, as well as the growing market of independent e-learning.

According to the CUX (Corporate University Xchange), a research company which specializes in the analysis of data in the field of corporate training, the number of Corporate Universities in the world has increased over the past 10 years from 400 to 1600. The USA has the largest number of corporate universities – more than 2000 (with about 4000 academic universities and colleges in the country). In Russia, the first Corporate Universities appeared in the early 1990s as national branches of the corresponding structures of global companies that came to Russian market (Zhdanov, 2007).

According to the Global Industry Analysts (USA), in 2011, about USD 35.6 billion of profit came from e-learning globally (Top 10 e-Learning Statistics…, 2014).

Based on the analytical reports of Global Industry Analysts, we can conclude that "the total

turnover of the global e-learning market in 2010 estimated USD 52.6 billion, with an increase of 32% (USD 40 billion) compared to 2007. In 2013, e-learning represnted an economic sector with sales of USD 56.2 billion". In 2015, the analyst company notes growth of up to USD 107 billion (Global E-Learning Market to Reach…, 2015)

According to the Docebo research report, in 2011 the world market of independent e-learning reached USD 35.6 billion. The five-year cumulative annual growth was estimated at about 7.6%, so by 2016 the revenues were about USD 51.5 billion.

The world's leading scientists have paid significant attention to e-learning; for example, V. Bradac and B.A. Walek (2017) emphasize the potential of e-learning in the study of foreign languages; Martin Alvarez Valdivia (2017) investigates the behavior and feedback during online classes; M. Kurucay and F.A. Inan (2017) study the influence of students interaction on the satisfaction with the quality of education bachelor students had during an online course.

Today, the term "e-learning" seems to be the most accurate one, as it is gradually replacing the concept of distance learning and appears in the new amendments to the Federal Law "On Education", which confirms its relevance and justifies its use in this context.

However, despite the duality of the concept and various ways it can be used, most scientists claim its relevance due to the international experience and see the prospects for introducing e-learning into the learning process. For instance, E.Z. Vlasova defines the concept of e-learning in terms of its prospects, naming this phenomenon "a kind of training that provides quick access to resources and services, enables sharing them, as well as productive teamwork for all parties in the educational process. It is actively used by many companies and educational institutions, allows increasing efficiency and saving learning time; motivates teachers and researchers to introduce innovative methods, technologies, and tools for developing and using e-learning solutions. That is why e-learning is implemented at a constantly growing scale. Currently, all advanced educational systems in the world are already based on it" (Vlasova, 2014).

In addition to that, when preparing future specialists in general, and in particular, specialists in the field of education, the application of e-learning is a must, which has long been proven throughout the world.

3. Materials and methods

The experimental stage of the research was conducted at the Chair of Informatics and Computer Science of M.K. Ammosov North-Eastern Federal University. The study included 200 master students enrolled at the Teacher Training Institute of the NEFU. The age and qualifications of teachers according to the degrees obtained are represented in Table 1.

Table 1
Age and gender composition of teachers and master students participating in the study for the period from 2016 to 2017

Age	25-34 y.o.	55,6 %
	35-55 y.o.	44,4 %
Qualifications according to the university degree	Computer Science	15 %
	Mathematics	15%
	Russian language and Literature	15%
	Social Studies	10%
	Foreign languages (English and	20%

	German)	
	History	10%
	Primary Education	15%

To analyze the implementation of e-learning according to the subjects taught by teachers in general education schools, we conducted a survey among 200 master teachers and 300 teachers of educational institutions in the city of Yakutsk. The survey was carried out online and in written form.

4. Results

Having analyzed the questionnaires of teachers doing a master course and teachers of Yakutsk schools, we may conclude that e-learning is the universal communication tool used when training future teachers via online interaction. The respondents note that corporate e-learning communication technology enables the following professionally important activities in school teachers' training: a communicative one, i.e. the use of cloud technology, videoconferencing, mailing lists, etc.; an educational and cognitive, access to online educational and methodological materials, books, programs, regulatory legal documents, online media, searching for specific educational information or familiarizing oneself with latest news, etc. (Gubanova, Kolga, 2015).

In addition to that, we developed special questionnaires for two large studies. The first study involved 200 master students. Their questionnaire consisted of 25 questions on different topics. We tried to cover all aspects of Internet use as fully as possible: the user activity, the use of network technology and resources, the general image of the Internet user, as well as methods of corporate e-learning in the online environment. The results of this study gave us an idea of how teachers doing major master degrees use the Internet.

The second stage included a study among school teachers, with the total sample of 300 people from various general education schools in Yakutsk. The questionnaire was tailored for this study and included 30 questions, both sociological and psychological ones. It had questions which determined the user activity of teachers and some details concerning its content, ideas about online training and risks, being familiar with electronic resources, as well as specifics of methodology and teaching technologies: a methodology for determining the emotional perception of online interaction and a number of open questions that allow conducting a qualitative analysis of the attitude to the online interaction of Yakutia universities.

Interviewing the respondents like this, we could determine how teachers use corporate e-learning for educational purposes, as well as it gave us an opportunity to compare the views of teachers and teachers doing a master degree on the corporate online interaction of universities. The analysis of the survey results provided interesting and unique data which enabled us to compare the features of the use and perception of online interaction of two Russian universities for the professional training of teachers in the schools of the region.

The number of respondents that prefer using modern educational technologies, especially online resources, in their work estimated 75%. The answers obtained from teachers and master students related to the preferences in educational paradigms – classical, network and information are the following: online training (27%), classical (24%); information (49%); besides, a significant number of respondents mentioned the effectiveness of ICT and multimedia technologies.

To find out how willing the respondents are to apply online resources in the master program, we asked a number of questions about the advantages of online training in academic subjects. With these questions we tried to identify the needs of teachers and master students regarding the use of specific online resources and technologies. The questionnaire revealed that 62% of the respondents realize the need to improve their professional

competencies in the area ofcorporate e-learning. In our opinion, this is due to the implementation of e-learning in higher education institutions of the North-East of Russia. Despite the widespread introduction of self-study courses on e-learning, it is clearly not enough: 45% of the respondents noted the need for further study in the area, i.e. the use of relevant software in their work.

Evaluating the effectiveness of the implementation of corporate e-learning for teachers pursuing a master degree we should note some qualitative changes that these master students had in this form of training: the overwhelming majority of would-be teachers were interested in carrying out educational projects with network resources support; they fully trusted their teachers and groupmates, and demonstrated that they are capable to communicate with their colleagues on professional matters in non-standard situations. Many master students sought to improve their information competence when teaching modules of academic subjects using electronic tools, network resources and technologies.

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5. Discussion

Training teachers for future work which includes online interaction is a fairly difficult task. It becomes even more complex when subjects are taught online or in electronic form, as such standard signals as the tone of the voice, eye contact, body language, etc. – the key elements of human interaction – are missing.

The technology of interaction of the educational infrastructure of the two universities aims to increase the effectiveness of online corporate training and is the focus of the corporate e-learning. Successful implementation of such form of training depends on a number of factors: technological competence, teacher's voice, content and balance of the training course, assessment, sociocultural issues, the level of difficulty, and so on. Indeed, the effectiveness of the training that uses technology is facilitated by the teacher's voice and demonstrating the effective use of this technology in teaching and studying, which has been shown by scientists and experts such as Betty Collis, Hirumi, Palloff and Pratt.

Relying on current knowledge, experience, and practice based on profound evidence, R. Donnelly and F. McSweeney (2009) in their book Applied E-Learning and Teaching in Higher Education bring together the views of eminent experts from all over the world who represent different subjects and perspectives, share their experience, knowledge, modern ideas about practical application and improvement of teaching practices.

If we compare our findings with the results of the studies conducted by other authors (R. Donnelly and F. McSweeney (2009), C. Depover, (2013)), we can note the similarity of the identified problems, as well as the results obtained.

For instance, C. Depover (2013) in his book Developing Countries in the E-Learning Era tracks the evolution and changes in educational policies and their impact on the planning of educational needs, as well as covers the topical issues of educational planning and analyses them in the context of the historical and social situation. In addition to that, the researcher explores the planning methodology that can be applied in both developed and developing countries. With regard to policy development and planning, potential experience is a powerful source of learning: it is viable to study in detail the problems that others face, goals they seek, approaches they use to achieve results.

In their research papers, the professors of the NEFU (Barakhsanova, Golikov, Nikolayeva, 2016) and the Russian State Pedagogical University (Vlasova, 2014) note that online interaction requires teachers doing a master degree to apply, firstly, prognostic, projective and mobilization skills. Secondly, online interaction implies indirect connections: the range of interaction is constantly increasing. Hence, online interaction is a kind of the connections system that allows developing, testing and proposing innovative models of the learning content, the economics of education, the management of the education system and educational policy to the teaching community and the society as a whole.

In their master program, students' progress doing modules and a number of special courses that reflect the educational needs of the leading educational institution or establishment. The curriculum includes integrative and interdisciplinary subjects in the field of education,

pedagogy, psychology, e-learning, organizational restructuring and innovation in teaching, which enable postgraduate students to develop their interdisciplinary knowledge. These relate to such issues as development and creating models of corporate e-learning, management of IT corporate training projects, knowledge management in educational institutions, methods and tools of corporate e-learning, distance learning technologies in corporate training, and cloud technologies in corporate e-learning.

Further study in this area may be related to the creation of programs that use e-learning for the professional development of teachers in the Arctic region.

6. Conclusion

Online interaction between universities in education is developing at a rapid pace and is gaining wider popularity in Russia. Despite the considerable backlog in this area, e-learning in Yakutia is developing within the framework of the adopted regulatory and legal documents and orders of the Russian Federation. However, creation of e-learning materials requires a lot of effort, as well as a sufficient level of competence and can be successful only if one takes into account its specifics and teachers receive appropriate training for its implementation. Besides, it should be noted that online activities imply voluntary cooperation, self-organization and self-development of methodological structures, educational establishments and teachers; this is an environment in which any educational institution and university can interact with any educational institution or a teacher, exchange ideas, create new intellectual property, etc.

Online processes promote the restructuring of the work of educational institutions as they seek new forms of work with students, parents, and a new model that would allow meeting the challenges the modernization of Russia's higher education poses in the field of e-learning.

It is important to note that online interaction contributes not only to the dissemination of innovations, but also a dialogue between schools participating in the project and adopting the experience of every participant, reflecting the processes that take place in all educational institutions of Yakutia.

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